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SCHOOL OF MEDICINE

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[www.marylandMACS.org](http://www.marylandMACS.org)

# Rural Opioid Epidemic

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**University of Maryland, School of Medicine**

**July 12, 2018**

# Opioid Epidemic

2 million Americans with substance use disorder  
due to prescription pain pills/2015

591,000 Americans with substance use disorder  
due to heroin/2015

# Opioid Overdose

- Opioid overdose deaths have quadrupled since 1999
- 2016 overdose deaths/ over 63,600/22% increase from 2015
- 42,249 died of an opioid OD in 2016
- 91 Americans die of an opioid overdose every day/2015. Over 115 a day in 2016

*CDC*

# Deaths from Other Causes

- Approximately 58,000 soldiers died in Vietnam War
- 55,000 died in car crashes at peak in 1972
- 43,000 died of HIV/AIDS at height of epidemic in 1995
- 40,000 individuals died of gun violence in peak year of 1993
- 41,070 Americans die of breast cancer each year

The Washington Post

Health & Science

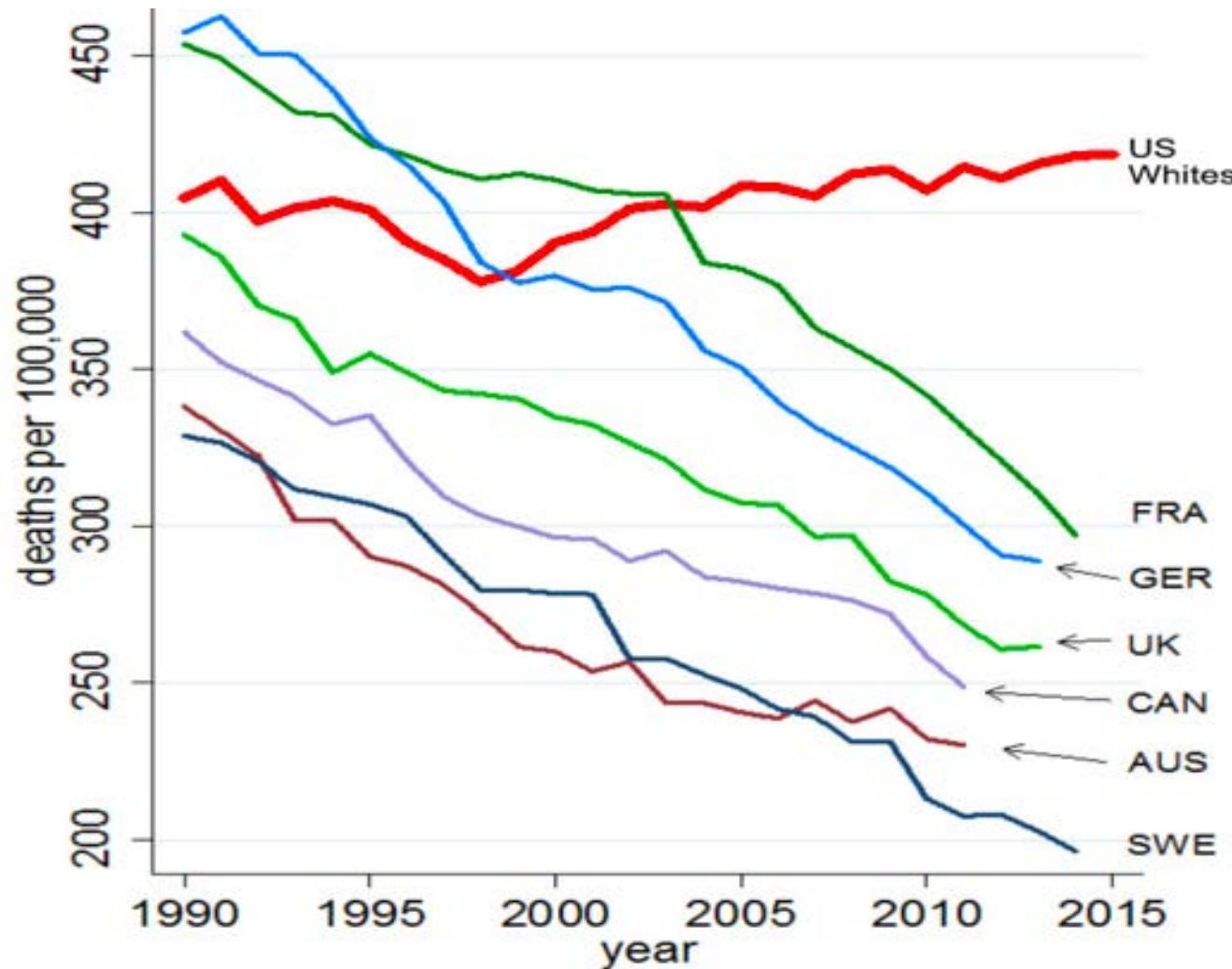
Fueled by drug crisis, U.S.  
life expectancy declines  
for a second straight year

12/19/17

# Opioid Overdose

- Drug overdose is the leading cause of death in the United States for individuals under 50
- Marked increase in middle-aged (45-54) mortality for white non-Hispanic men and women in US between 1999-2013
- Deaths from drug overdose are most likely significantly underestimated

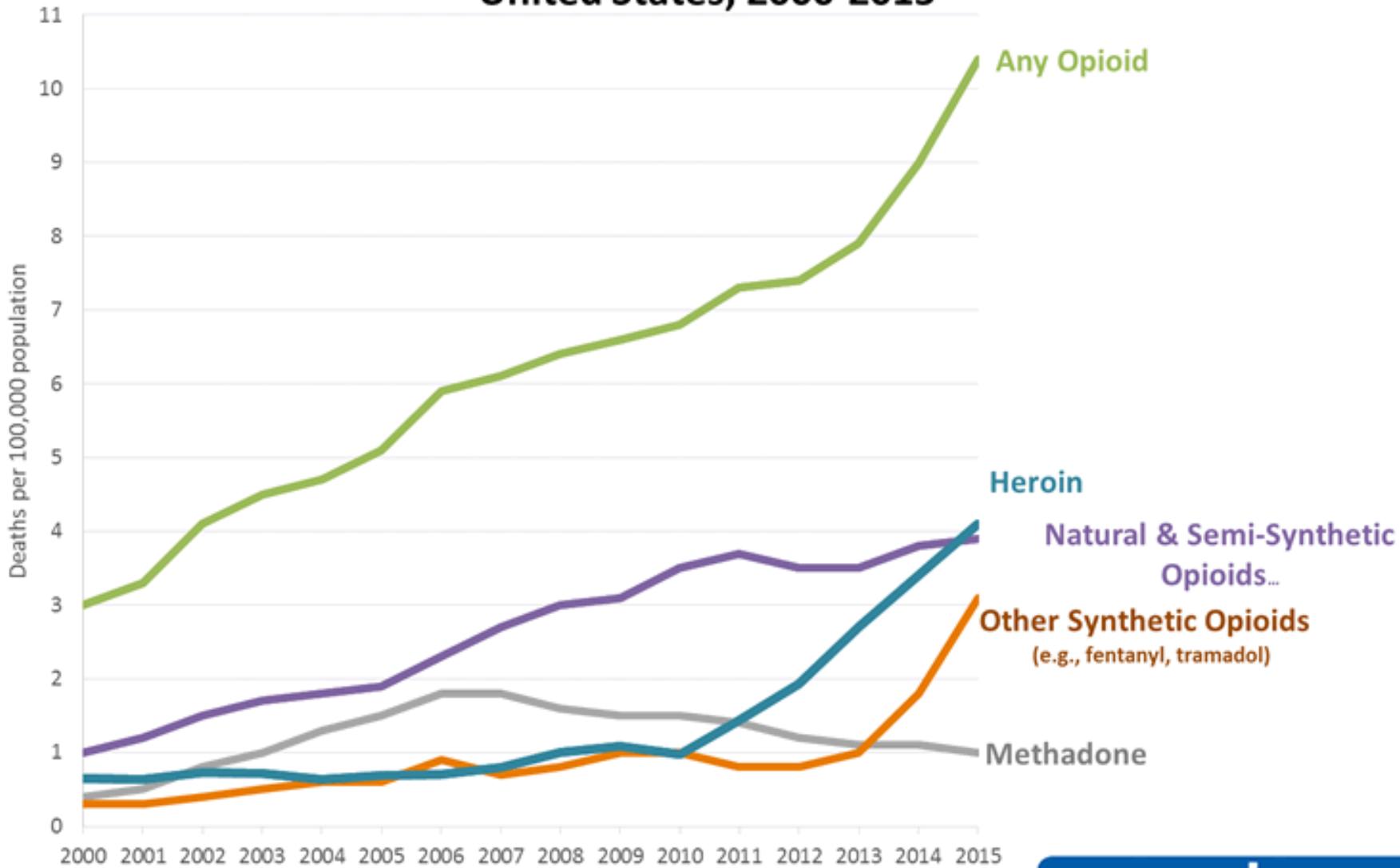
# All-cause mortality rates ages 45-54C Rates



# Causes of Rapid Rise in Opioid Overdose

- Increase in prescription opioid availability
- Significant increase in supply of heroin and decrease in cost
- Increased availability of high potency synthetic opioids such as fentanyl

# Overdose Deaths Involving Opioids, by Type of Opioid, United States, 2000-2015



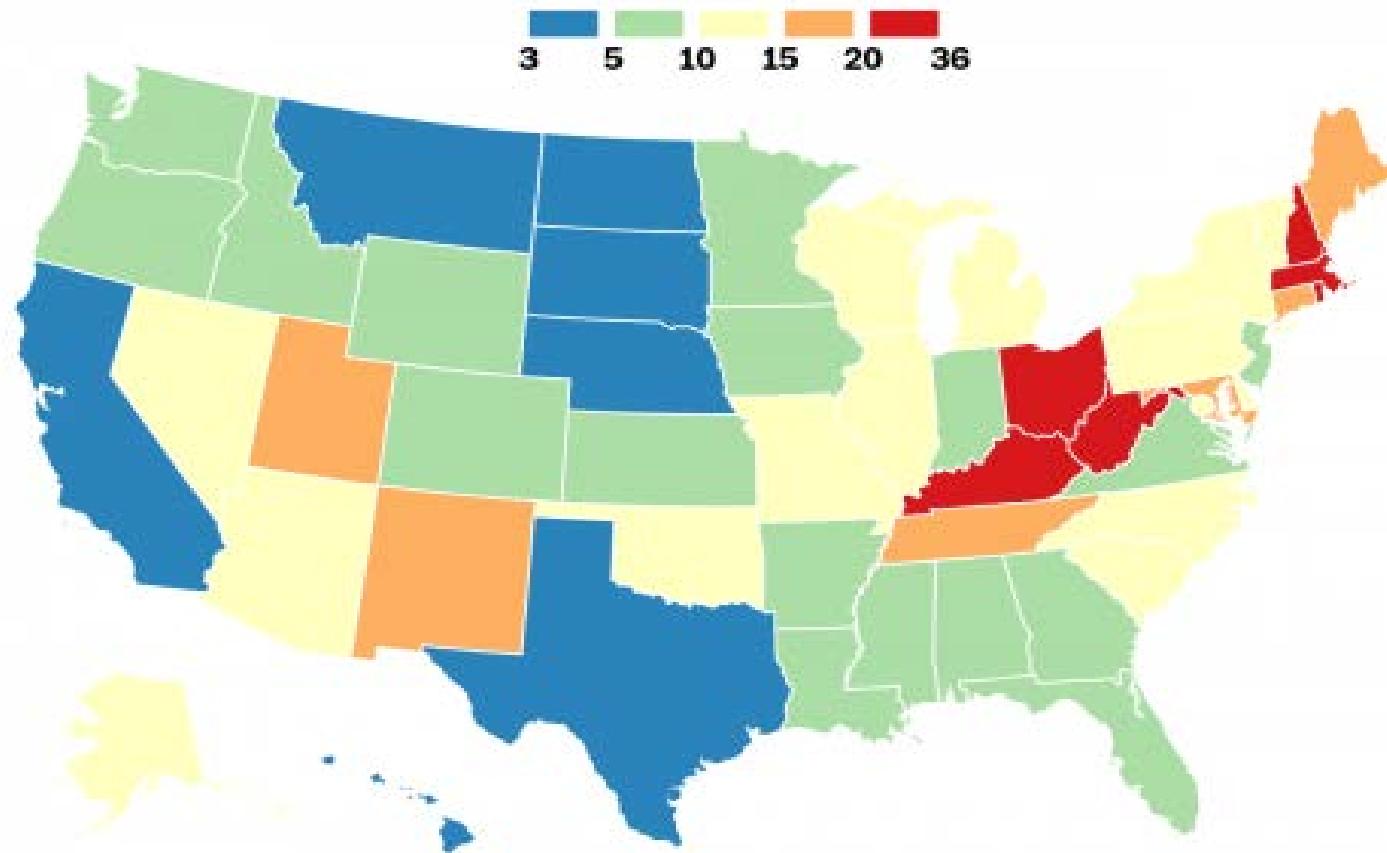
SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2016. <https://wonder.cdc.gov/>.

# Opioid Overdose Deaths 2016

- Prescription opioids 14,400
- Heroin 15,400
- Fentanyl and its analogues 20,100 (Increased from 3,000 to 20,000 in 3 years which is a 540%)

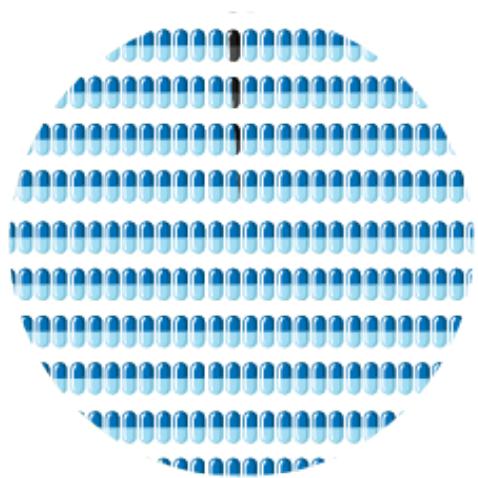
# Opioid deaths in 2015

Age-adjusted death rates (per 100,000) for overdose deaths from all opioid drugs

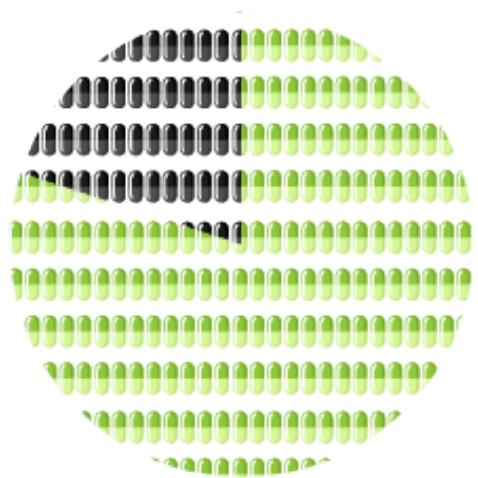


# Prescription Opioids

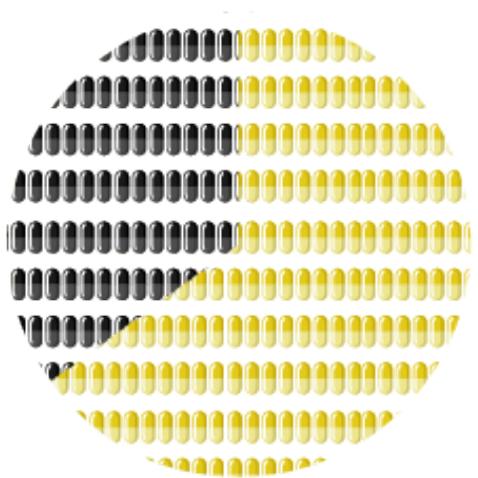
- In 2012, 259 million prescriptions were written for opioids, enough for one bottle for each adult in US
- 80% of all opioids are prescribed in the US (4.6% of the worlds population)



**99%**  
Hydrocodone  
Consumption



**80%**  
Oxycodone  
Consumption

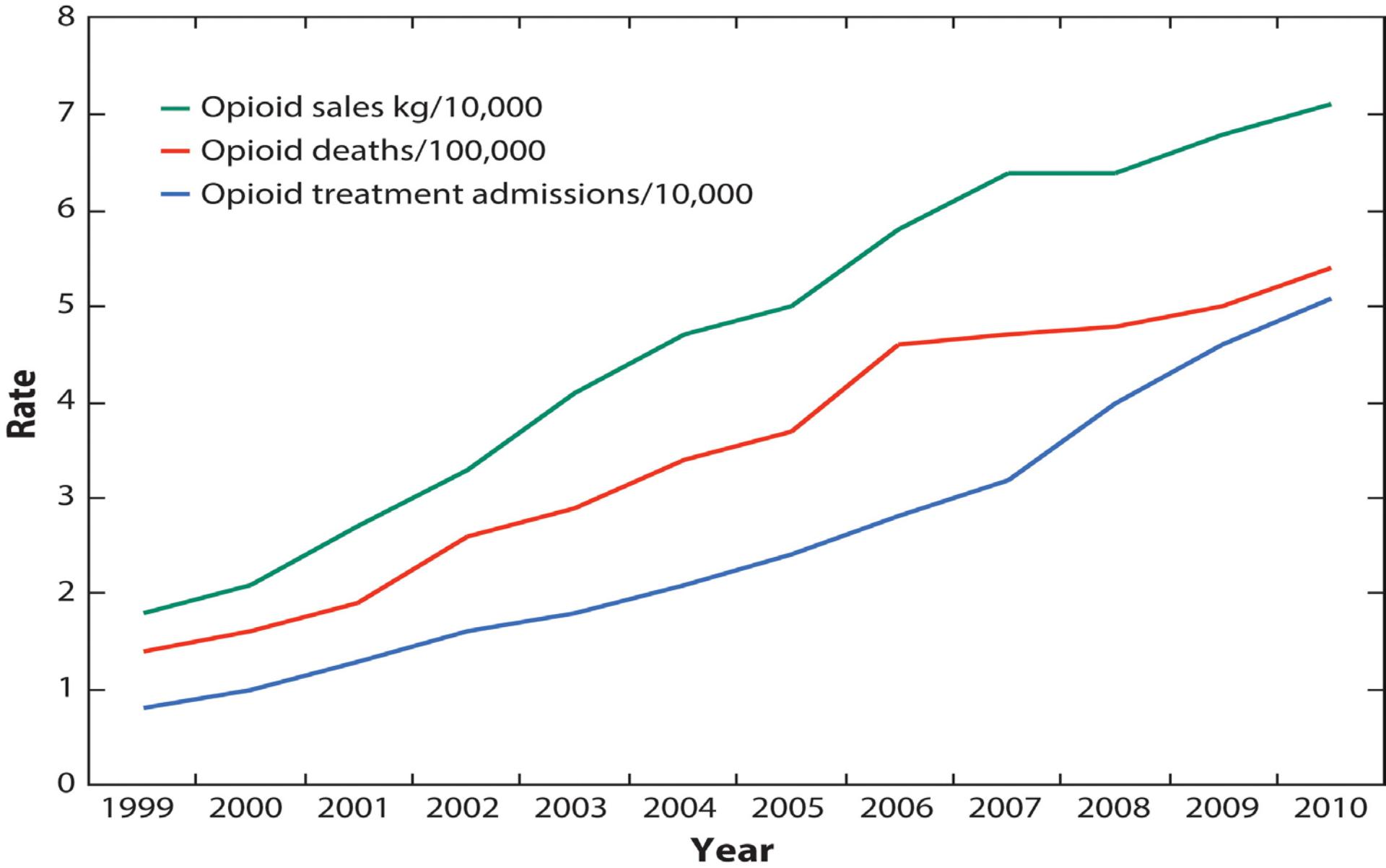


**65%**  
Hydromorphone  
Consumption

# Feds: Doctor prescribed nearly 3 million opioid prescriptions over 19 months

108PraiseEditor © December 22, 2017 CNN\_TOPSTORIES





Kolodny A, et al. 2015.

Annu. Rev. Public Health. 36:559–74

# Rise In Opioid Prescribing

- 1980 NEJM Letter to Editor
- Russell Portnoy MD
- Pain is the fifth vital sign promoted by American Pain Society 1996
- 2001 adoption by Joint Commissions Pain Management Standards
- Use of opioids to treat non malignant pain
- Long acting opioids non-addictive
- Big Pharma
- OxyContin
- Patient satisfaction

# Addiction Rare in Patients Treated with Narcotics

N Engl J Med 1980; 302:123[January 10, 1980](#)DOI:  
10.1056/NEJM198001103020221

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**To the Editor:**

Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients<sup>1</sup> who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients,<sup>2</sup> Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

Jane Porter

Hershel Jick, M.D.

Boston Collaborative Drug Surveillance Program Boston  
University Medical Center, Waltham, MA 02154

## **After surgery, more than two-thirds of patients wind up with leftover prescription opioids, study Finds**

**Surgical patients who are prescribed opioids for their pain are frequently left with unused pills, a new study finds. (John Moore / Getty)**

Picket et al, Jama Surgery 2017:152(1066-1071)

# OxyContin

- OxyContin/Purdue Pharmaceuticals 1996
- Aggressively Marketed/Highly Promoted
- Sales from 48 million to 1.1 billion from 1996-2001
- Focus on high prescribers of opioids and PCP's
- Free time limited prescriptions
- Non-malignant pain/86% of pain market in 2000
- Minimized risk of addiction at 1%
- Highly abused/new formulation 2010

# Feds: Doctor prescribed nearly 3 million opioid prescriptions over 19 months

108PraiseEditor © December 22, 2017 CNN\_TOPSTORIES



# **BUSINESS DAY**

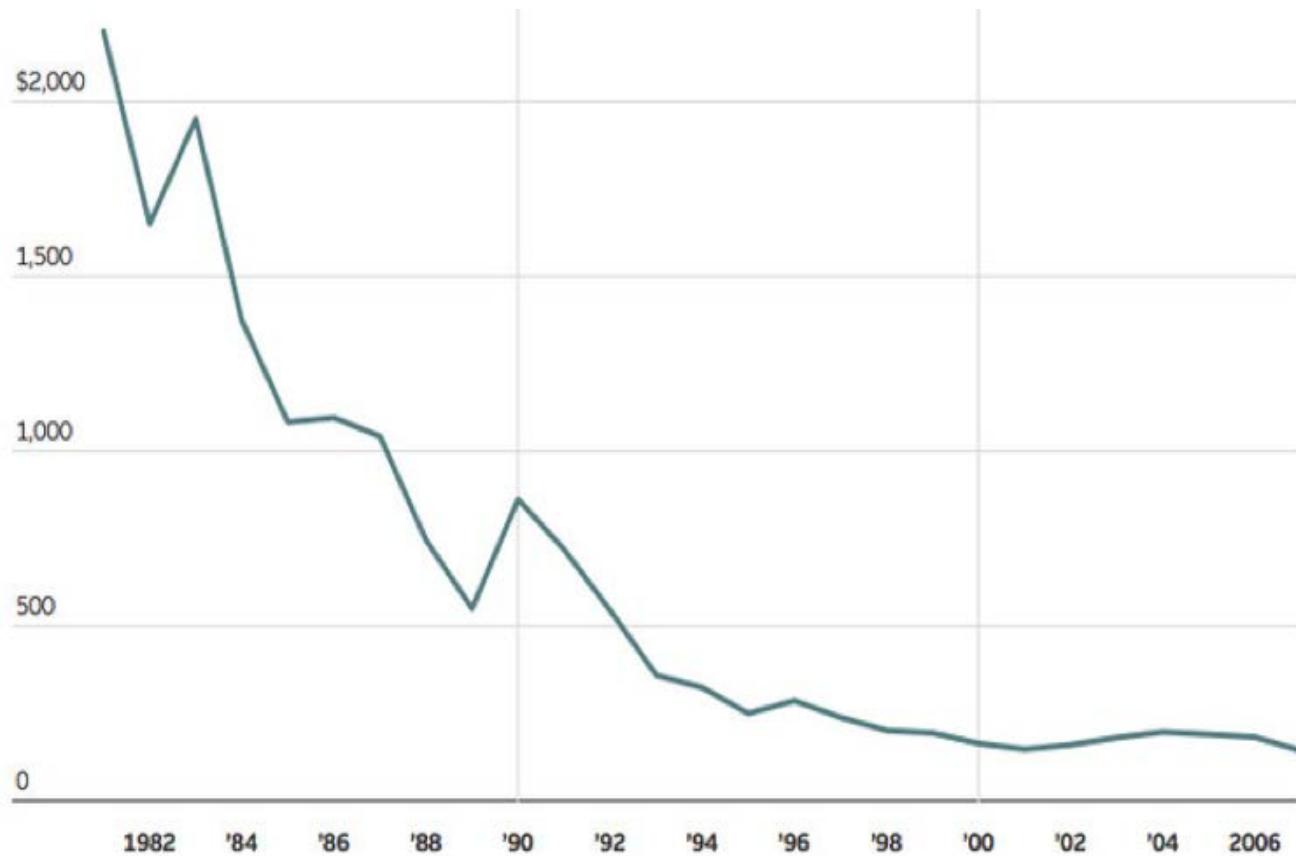
## ***In Guilty Plea, OxyContin Maker to Pay \$600 Million***



# Heroin

- Users of heroin have approximately doubled since 2008
- Price of heroin has decreased dramatically since the 1980's and continues to drop (halved again between 2010-14)
- Supply has increased/seizures were up close to 150% between 2010-15
- Source has changed and now 80% of US heroin is being imported from Mexico
- Potency of heroin purer and more potent

# Median bulk price of heroin per pure gram



Source: Office of National Drug Control Policy

# Prescription Opioid/Heroin Use Link

- During the 60's heroin epidemic most users often chose heroin as their first drug
- Currently most heroin users/80% start with the non-medical use of prescription opioids before switching to heroin
- Most current heroin users started with other drugs as adolescents before trying prescription opioids

# Fentanyl Agonist at μ-opioid Receptor

- Fast acting and short duration
- 50 x > heroin, 100x > morphine.
- 2 Classes:
  - Pharmaceutical Fentanyl
  - Non-pharmaceutical Fentanyl- Illegally made.
- 2015 DEA alert: “Fentanyl is a threat to public health & safety”

## OPIOID POTENCY



Carfentanil: 10,000x

Fentanyl: 100x

Heroin: 2x

Morphine: 1x

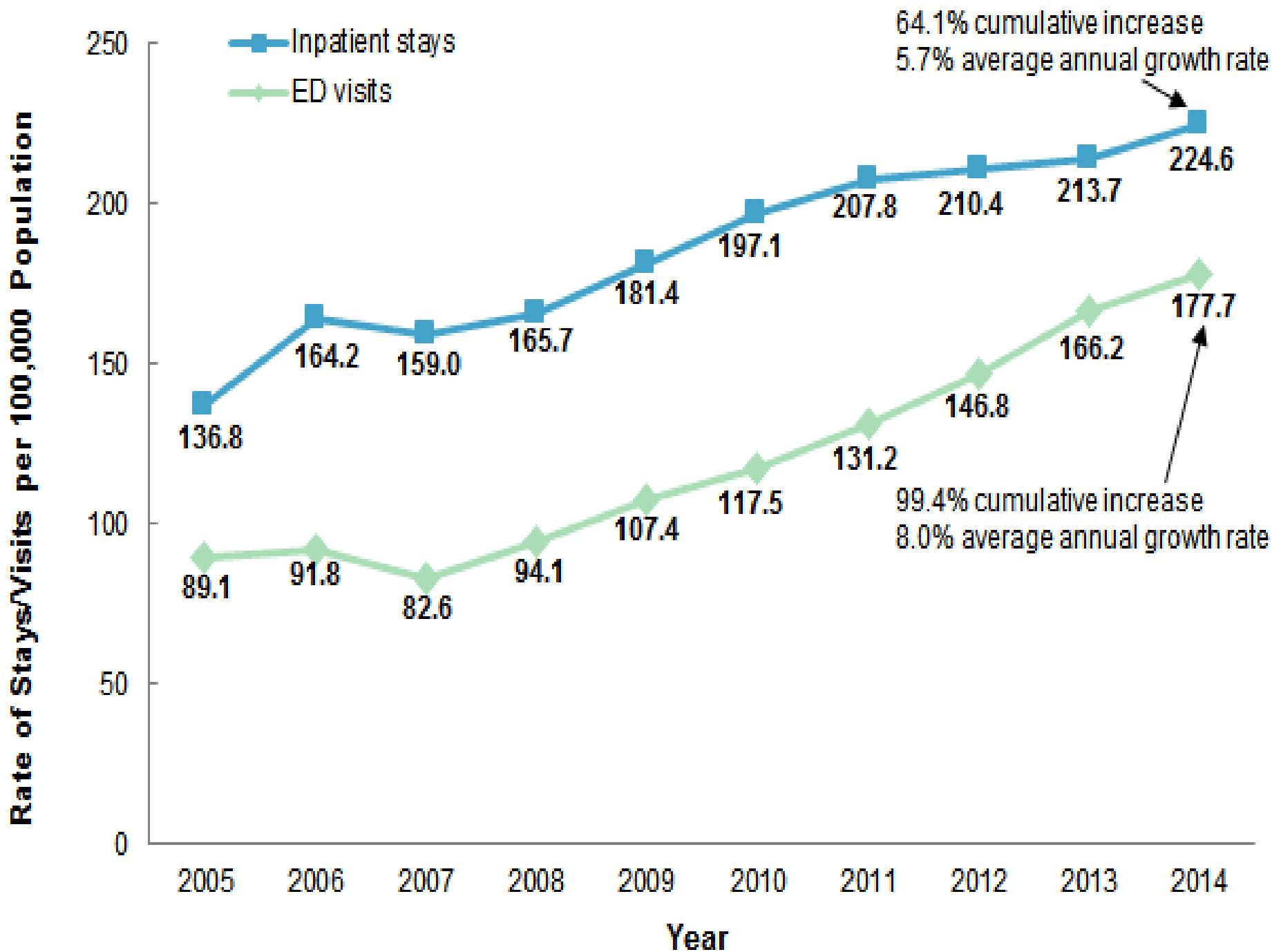
HEROIN

FENTANYL

CARFENTANIL

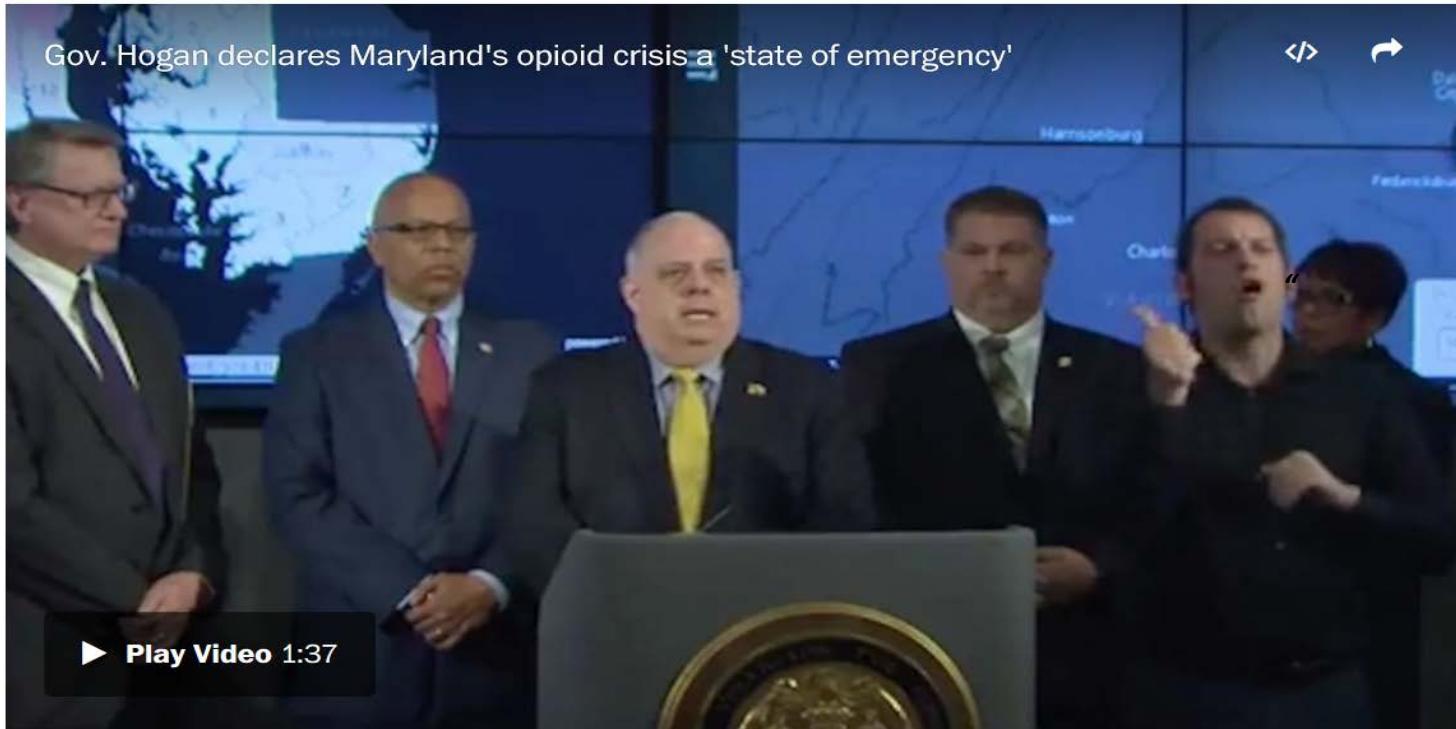
# Impact of Epidemic

- Acute care medical use and costs
- Children and families of overdose victims
- Pregnant addicted women
- Significant increase in rates of Hepatitis
- Criminal justice system
- Foster care system



Maryland Politics

## Maryland governor declares state of emergency for opioid crisis



At a news conference on March 1, Maryland Gov. Larry Hogan (R) said he will sign an executive order to declare the state's opioid crisis a "state of emergency," a legal step that will allow state agencies to better coordinate their response to the growing opioid addiction crisis. (Facebook/larryhoganmd)

By Bill Turque March 1 [✉](#)

*“Deaths from drug, alcohol overdoses skyrocket in Maryland*

*Maryland health officials reported Thursday that fatal overdoses are up 66 percent from 2015 to 2016.”*

*—Meredith Cohn, The Baltimore Sun*

# Total drug and alcohol intoxication deaths for 2016

**State: 2,089**

Baltimore City: 694

Baltimore County: 336

Anne Arundel County: 195

Prince George's County: 129

Montgomery County: 102

Frederick County: 88

Harford County: 84

Washington County: 66

Allegany County: 59

Wicomico County: 48

Carroll County: 47

Howard County: 46

Charles County: 45

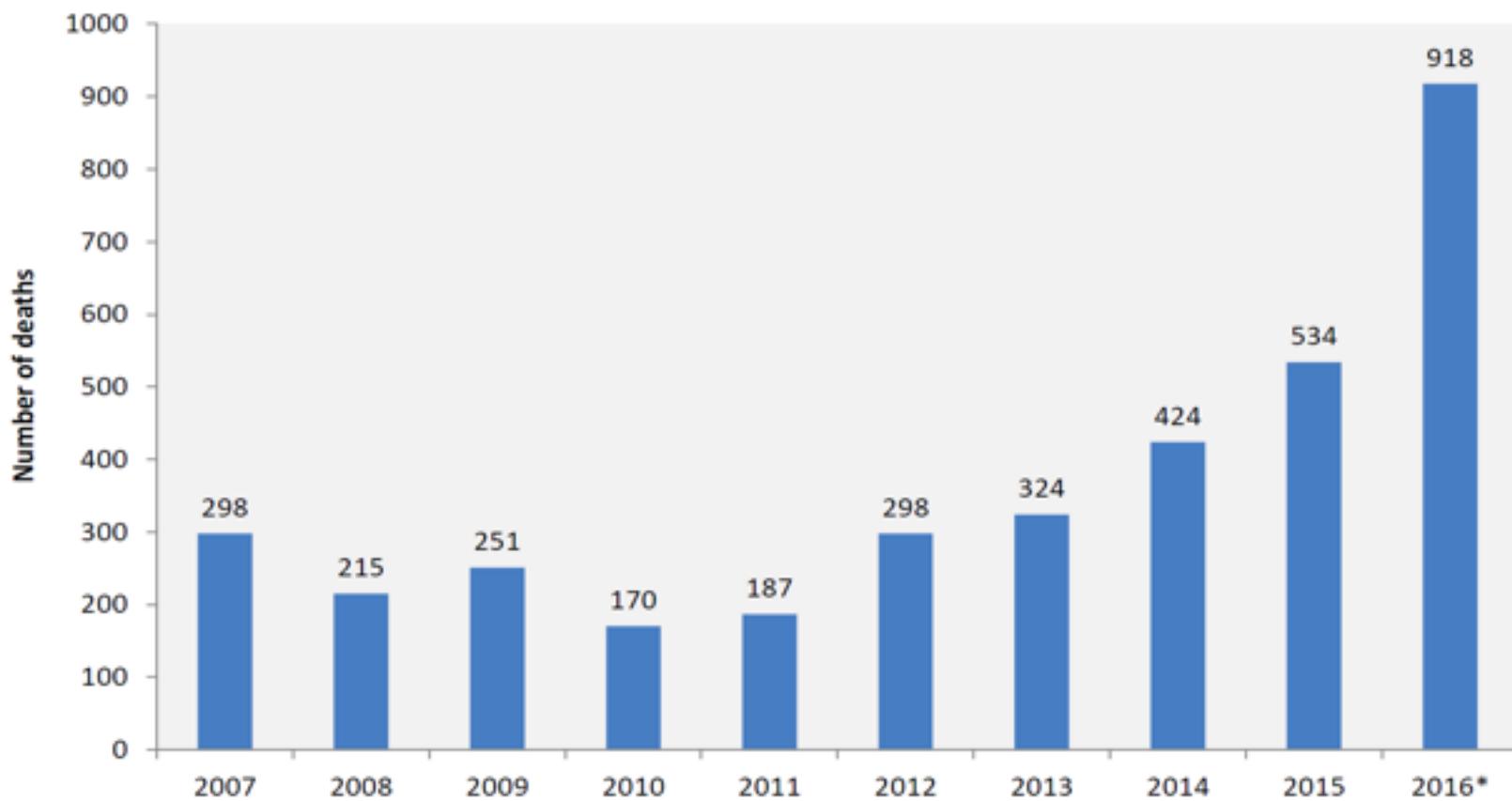
Cecil County: 30

Worcester County: 28

*Source: Maryland Department of Health and Mental Hygiene*

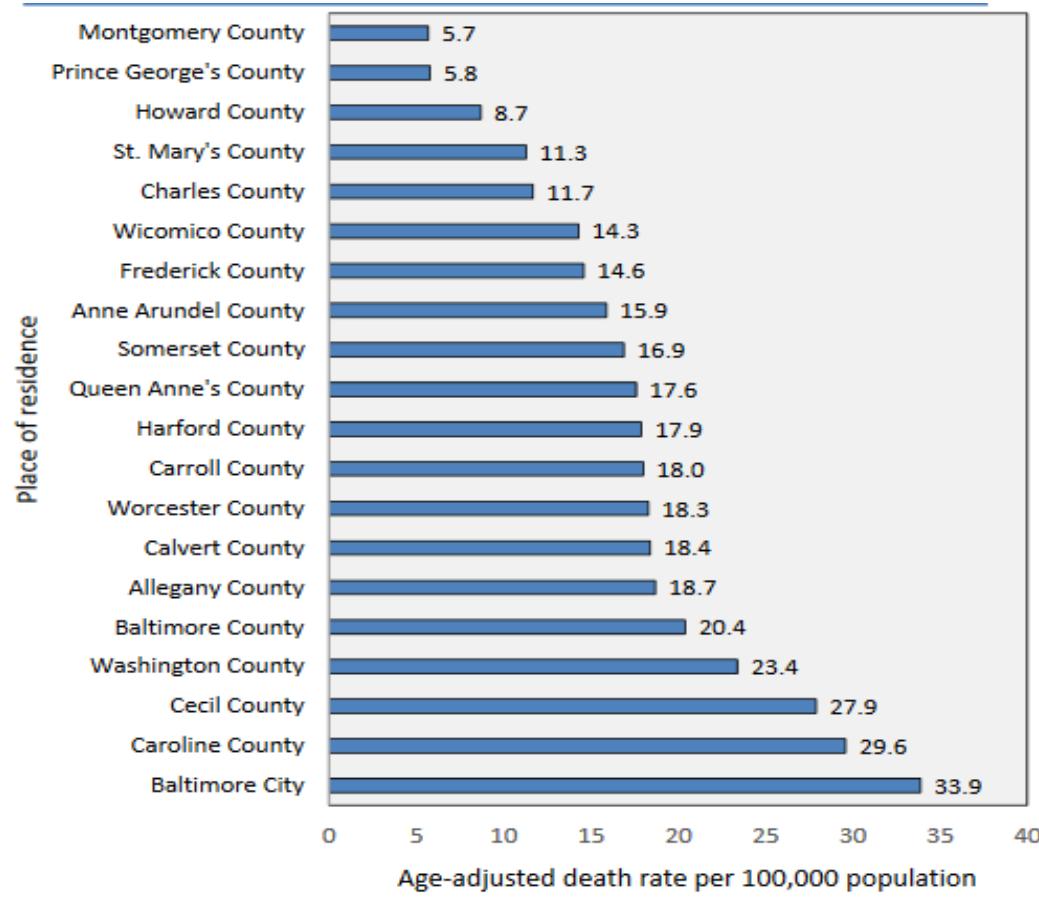
Drug Type	United States	Alaska		Iowa	Maine	Maryland		New York City		Virginia		Washington		
	Number of deaths ending 12 months in													
	Jan-16	Jan-17	Jan-16	Jan-17	Jan-16	J Jan-16	J Jan-16	Jan-17	Jan-16	Jan-17	Jan-16	Jan-17	Jan-16	Jan-17
Heroin (T40.1)	13,219	15,446	35	50	40	49	418	679	421	595	339	451	323	285
Natural and semi-synthetic opioids (T40.2)	12,726	14,427	60	40	76	108	394	712	222	337	270	346	272	281
Methadone (T40.3)	3,276	3,314	13	11	22	34	179	200	125	177	73	70	119	127
Synthetic opioids excluding methadone (T40.4)	9,945	20,145	13	10	47	111	386	1,222	154	628	263	692	61	101
Cocaine (T40.5)	6,986	10,619	9	15	17	32	154	328	308	537	168	263	86	82
Psychostimulants with abuse potential (T43.6)	5,922	7,663	27	55	61	23	21	48	49	60	45	68	316	338
Quality: % of overdose deaths with drug(s) specified	83%	85%	90%	99%	90%	99%	99%	99%	98%	100%	98%	99%	95%	93%

# Number of Heroin-Related Deaths Occurring in Maryland from January through September of Each Year\*

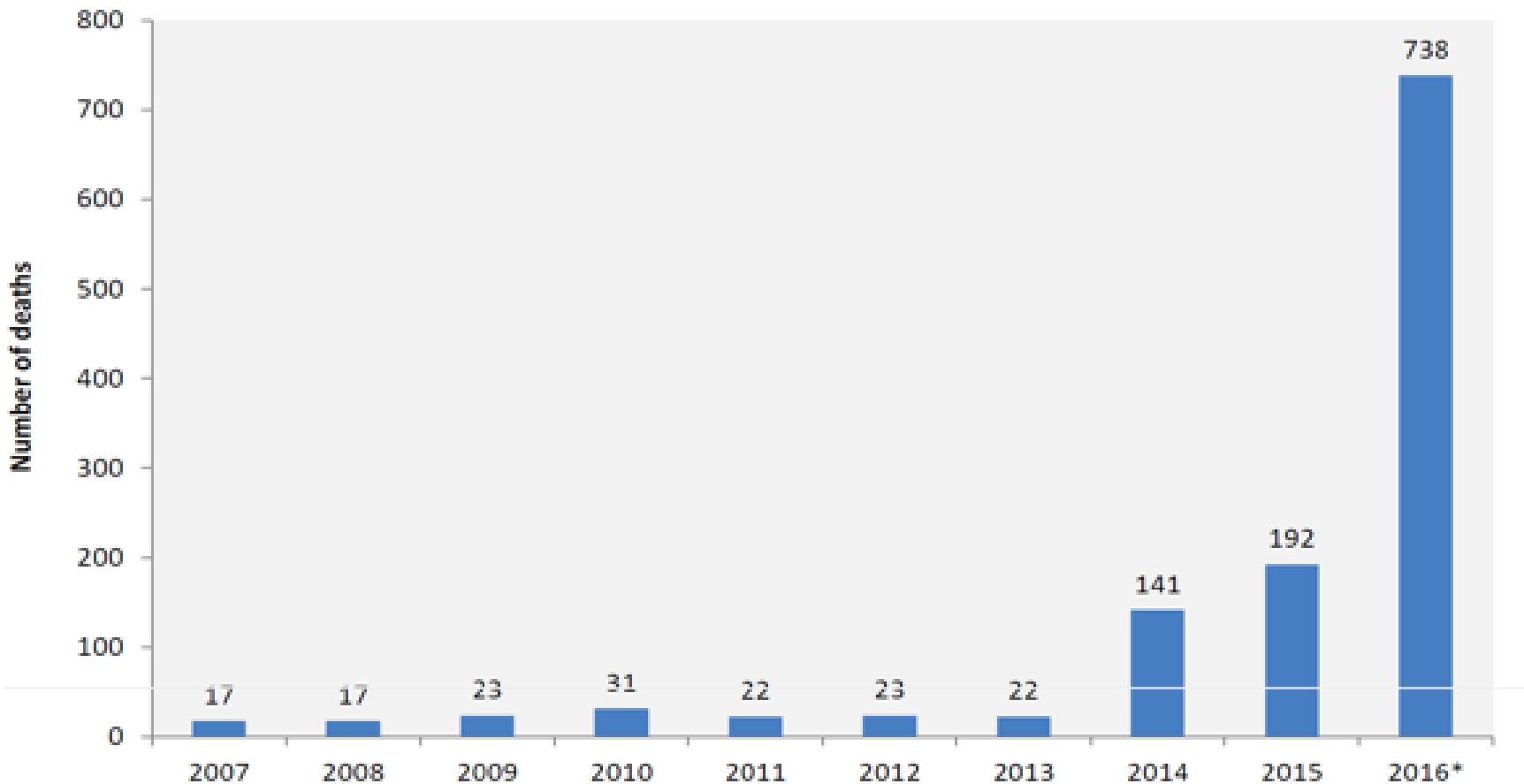


\*2016 counts are preliminary.

# Age-adjusted overdose death rates



# Number of Fentanyl-Related Deaths Occurring in Maryland from January through September of Each Year\*



\*2016 counts are preliminary.



# THE BALTIMORE SUN

Opioid users filling Maryland hospital bed and emergency rooms”



# Opioid Usage Impact in Maryland

- Maryland ranked #1 among all states in 2014 in rate of opioid related inpatient hospital stays
- Maryland ranked # 2 among all states in opioid related Emergency Department visits

# Rural America

- Disproportionally impacted
- Higher rates of opioid prescribing
- Demographic, economic and environmental factors
- Higher overdose rates
- Higher rates of neonates in withdrawal
- Physical jobs with more injuries
- Larger social networks

# Rural Drug Overdose Deaths

1999

rural 4.0 per 100,000

urban 6.4 per 100,000

2004 rates were equal

2006 rural rates were higher (11.7 vs 11.5)

2015

rural 17.0 per 100,000

urban 16.2 per 100,000

Morbidity and Mortality October 20, 2017 / 66(19);1–12

# “Deaths of Despair”

- 1999-2014 Increasing death rates in middle ages whites 45-54
- Decline in white working class w/o college degrees
- Suicides
- Overdoses
- Alcoholic liver disease

Is the US facing an epidemic of 'deaths of despair'? These researchers say yes

Anne Case and Angus Deaton's findings on mortality rates have made waves. A new paper looks deeper at a divided America - and its crisis of suicide, overdoses, and drug- and alcohol-fueled diseases



© There appear to be two Americas: one for people who got a four-year college degree, and one for people who didn't. Photograph: WIN-Initiative/Neleman/Getty Images/WIN-Initiative RM

In 2015, the Princeton economists Anne Case and Angus Deaton's groundbreaking paper in the National Academy of Science's magazine reported that mortality rates among a section of Americans were suddenly surging - something unheard of in previous decades. Mortality was only rising in a certain group: middle-aged non-Hispanic whites without a college degree.

Case and Deaton have returned with a new paper published last week by the [Brookings Institute](#). It paints a grim picture of two Americas, in which one has

## PUBLIC HEALTH & DESPAIR IN THE AMERICAN HEARTLAND

Causes, Solutions, and Complexity,  
p. 1533 and pp. 1541–1567

PREEXPOSURE PROPHYLAXIS  
Generalizing Access,  
pp. 1534 and 1568–1581

COMMUNITY HEALTH WORKERS  
Impact on Chronic Diseases,  
pp. 1660 and 1668

COUNTING DEATHS  
Versus Years of Life Lost,  
pp. 1535 and 1653

 APHA  
AMERICAN PUBLIC HEALTH ASSOCIATION  
*For science. For action. For health.*

# Opioid overdoses shorten US life expectancy by 2½ months

By Nadia Kounang, CNN

① Updated 12:33 PM ET, Tue September 19, 2017



More from CNN



More people prescribed treat their any other

“...the stress and hopelessness faced by this population as they enter the labor market and are met with bleaker prospects and lower paying job opportunities relative to the prior generation . . . [has led] to compounding family dysfunction, poor social support, and addiction, conditions that are the drivers of ‘despair deaths.’”

# Economic Decline of Rural America

- Peak of rural economy in the early 1970's
- Loss of industrial jobs
- Migration of younger population
- Loss of population between 2010-16 for the first time in history
- Aging shrinking population
- Increase in poverty

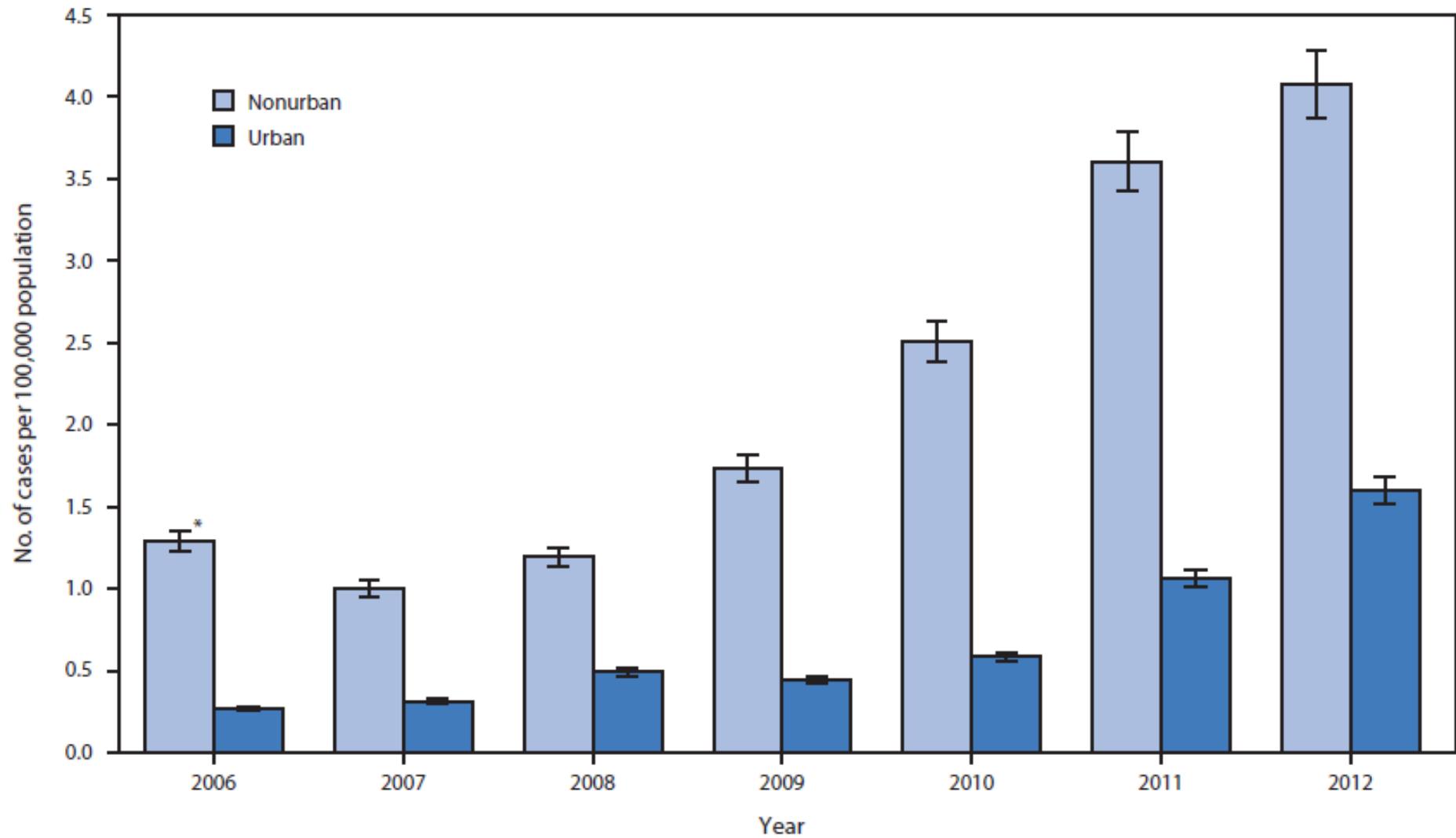
Between 2000-2013 non metro counties with poverty rates of 20 percent or more rose from 20.6 to 32.5 percent

# Overdose Deaths in Rural America

- Rural areas account for about 80% of American land mass
- Most overdoses occur at home
- Only 15-20 percent of EMT's are in these rural areas
- Basic EMT's are not able to administer naloxone in many areas



# Increase in Hepatitis C Rates





# Tackling the Epidemic

- Prevention
- Treatment/Recovery
- Enforcement

# Primary Prevention Strategies

- Prescriber education on treatment of chronic pain
- Use of alternative modalities for pain management to reduce patient exposure to opioids
  - physical therapy
  - acupuncture
  - non-narcotic medication
- Returning unused opioid medications
- Education of adolescents of risk
- Identifying and closing opioid “pill mills”

# Secondary Prevention Strategies

- Accurate diagnosis by medical providers
- PDMP
- Mandated checking of PDMP
- Collateral Information

# Tertiary Prevention/Treatment: Focus of Treatment

Illicit Opioid Use

Other Drug Use

Overdose

Injection Drug Use

Medical Complications

Psychosocial Deterioration

Criminality

Infectious Disease Transmission

# **Medication Assisted Treatment**

Combination of medications with  
counseling and behavioral therapies to treat  
substance use disorders

# Medication Assisted Treatment

*Recommended as treatment for opioid use disorders  
by the following:*

- United States Federal Government
- American Society of Addiction Medicine(ASAM)
- World Health Organization
- United Nations

# Medication Assisted Treatment

“Access to medication-assisted treatment can mean [the] difference between life or death.”

*Michael Botticelli, October 23, 2014 Director, White House Office of National Drug Control Policy*

# Medication Assisted Treatment: FDA Approved

- **Methadone** (Methadose; Dolophine)
- **Buprenorphine** (Suboxone; Suboxone Film;  
Subutex; Bunavail; Zubsolv)
- **Naltrexone** (Trexan; Vivitrol)

# Medication Assisted Treatment

Only 40 percent of the 2.5 million Americans who could benefit from medication-assisted treatment are receiving it

*\*Substance Abuse and Mental Health Services Administration (SAMHSA).*

# Medication Assisted Treatment

- Decreases rate of overdoses
- Increases retention in treatment
- Decreases illicit opioid use
- Improves social functioning
- Decreases transmission of infectious diseases
- Decreases criminal activity

# Barriers to Medication Assisted Treatment

## Associated stigma:

- Addicted to another drug
- Covering up the addiction
- Personal bias based on experience
- Adherence to abstinence based treatment
- Negative attitudes towards individuals with addiction disorders.

# Barriers to Medication Assisted Treatment in Rural Areas

- Lack of OTPs/less than 5% in rural areas
- Methadone programs highly regulated; require frequent attendance
- Lack of buprenorphine waivered prescribers
  - less than 2% in remote rural areas
  - 60% of US counties without a waivered buprenorphine provider
- Geography/ transportation/weather
- Stigma related to receiving treatment in a specialized program (ie. a methadone program)

# Tele & SUDs

## ADVANTAGES

- Chronic nature of substance use disorders
- Extends provider's availability
- Offers potential immediate resource
- Removing barrier of geography
- Removing barrier of stigma

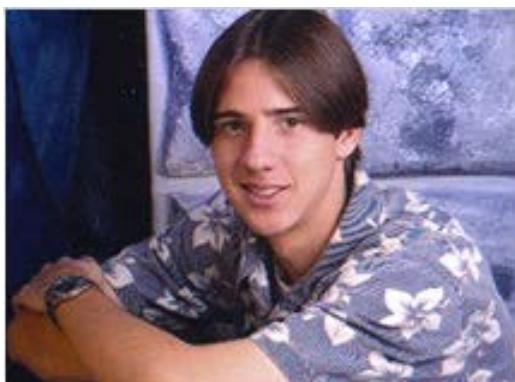


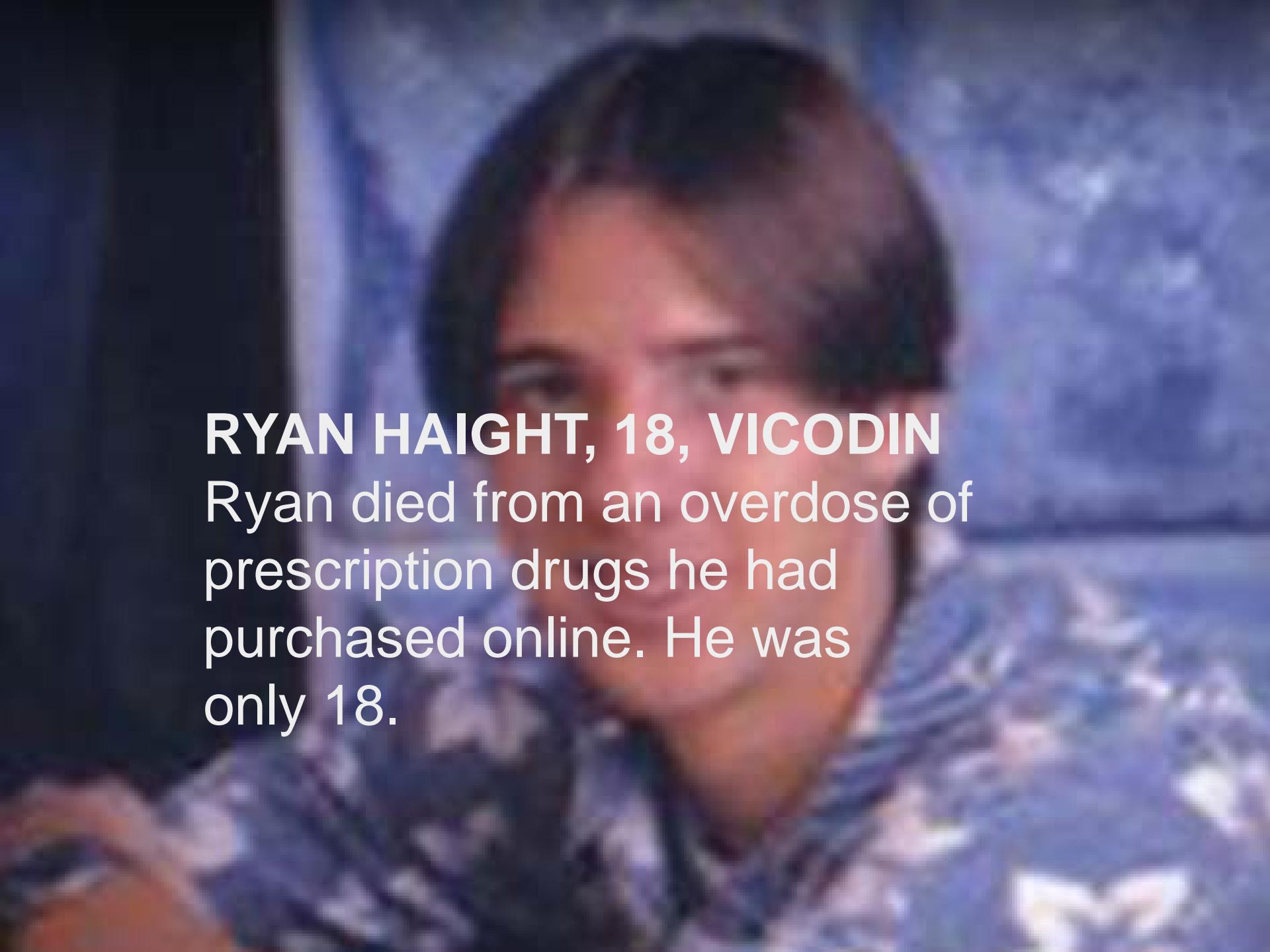
Copyright 2005 digital-topo-maps.com

# Tele & SUDs

## LIMITATIONS

- Disparate State Regulations
- Insurance Parity
- Federal Regulation of Controlled Substances
  - The Ryan Haight Online Pharmacy Consumer Protection Act of 2008





## **RYAN HAIGHT, 18, VICODIN**

Ryan died from an overdose of prescription drugs he had purchased online. He was only 18.

# Ryan Haight Act

- RH Online Consumer Protection Act
- Targets Rogue “Form Only” Online Pharmacies
- Passed in 2008 and took effect in April 2009
- To prevent illegal distribution and dispensing of **controlled substances** via the internet

# Ryan Haight Act

- No controlled substance may be delivered, distributed, or dispensed without a “Valid Prescription”
- “Valid Prescription” A prescription issued for a legitimate medical purpose in the usual course of professional practice
- A Prescription issued by a practitioner who has conducted at least 1 “in-person medical evaluation” of the patient
- In-Person Medical Evaluation A medical evaluation that is conducted with the patient in the physical presence of the practitioner

# Definition of Telemedicine

- A) is being conducted - while the patient is being treated by, and physically located in a DEA- registered hospital or clinic.
- B) is being conducted - while the patient is being treated by, and in the physical presence of, a DEA-registered practitioner.

# Telemedicine Exemptions

- Indian Health Service or Tribal Organization
- Public health emergency declared by the Secretary of Health and Human Services
- Special Registration from the DEA
- Department of Veterans Affairs medical emergency

# Other Factors to Consider

- State Laws
- Medical Board Requirements
- Proposed Federal Statutes
  - 1. Improving Access to Remote Behavioral Treatment Act
  - 2. Special Registration for Telemedicine Clarification Act

# Maryland Addictions Consultation Service



Maryland's Behavioral Health Integration  
Program for Opioid Use Disorders

*Offering consultation to medical providers  
across Maryland*

# Conclusion

- The US and the State of Maryland are in the midst of an Opioid Epidemic which is a major public health crisis
- There are extremely lethal synthetic opioids that are being abused that are causing soaring overdose death rates
- The over prescribing of opioid pain medications has been a major contributor to the crisis
- Effective life saving treatments do exist but there are significant barriers preventing patients from accessing them